

## ABSTRACT

The invention relates to a new method and system for optimizing the efficiency of an automotive catalytic converter by adjusting the engine air/fuel ratio based on estimates of 5 the actual amount of oxidants stored in the catalyst. An available oxidant storage capacity of the catalyst is determined by establishing an oxidant set point location, i.e., a location in the catalyst about which the system controls the oxidant storage. The oxidant set point is 10 established based on the temperatures of the different potential set point locations and the levels of deterioration of the different potential set point locations, as well as the oxidant storage capacity of the emission control device system.